UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2

DATE: JUN 12 2008

SUBJECT: Documentation of concurrence with the preparation of an Engineering Evaluation/Cost Analysis in support of a CERCLA Non-Time Critical Removal Action at the Diamond Alkali Superfund Site in Newark, New Jersey

FROM: Raymond Basso, Strategic Integration Manager
Emergency and Remedial Response Division

TO: Alan J. Steinberg
Regional Administrator

THRU: George Pavlou, Acting Division Director
Emergency and Remedial Response Division

I. SUBJECT

The purpose of this memorandum is to document your concurrence for the preparation of two Engineering Evaluation/Cost Analyses (EE/CAs) for removal actions in the sediments of the Lower Passaic River in front of 80-120 Lister Avenue in Newark, New Jersey (NJ), all part of the Diamond Alkali Superfund Site. In February 2008, the U.S. Environmental Protection Agency (EPA) received a proposal from the Occidental Chemical Corporation (OCC), one of the potentially responsible parties at the Site, to evaluate these removal actions under the Comprehensive Environmental Response, Compensation and Liability Act, as amended (CERCLA), 42 U.S.C. Sections 9601 *et seq.*

The Diamond Alkali Superfund Site ("the Site") includes the Diamond Alkali plant located at 80 and 120 Lister Avenue in Newark, NJ, and the Lower Passaic River Study Area (LPRSA), and the areal extent of contamination. The LPRSA is the 17-mile, tidal portion of the Passaic River, from Dundee Dam to Newark Bay, located in Essex, Hudson, Bergen and Passaic Counties, NJ. The LPRSA is considered a facility as defined by Section 101(9) of CERCLA, 42 U.S.C. Section 9601(9). Past industrial operations at the Diamond Alkali plant have resulted in the release of hazardous substances, as defined by CERCLA, into the Lower Passaic River and Newark Bay. Based on the available information, a CERCLA removal action is warranted in the sediments of the Lower Passaic River in front of the Diamond Alkali plant to minimize the potential for release of extremely high concentrations of 2,3,7,8-Tetrachloro-dibenzo-p-dioxin (2,3,7,8-TCDD) that could impact nearby human populations, animals or the food chain.

The goal of the removal action would be to excavate a portion of the highest concentrations of 2,3,7,8-TCDD in the area delineated in Figure 1. The removal would be implemented in two phases. Phase I involves the excavation of 40,000 cubic yards as shown in Figure 1, behind sheet piling, with the dredged materials sent to an off-site treatment and disposal facility. Phase II involves the excavation of 160,000 cubic yards as shown in Figure 1, behind sheet piling, with

the dredged materials sent to a modular confined disposal facility (CDF) within the areal extent of contamination of the Diamond Alkali Superfund Site.

Because the most highly concentrated 2,3,7,8-TCDD-contaminated sediments are several feet below the surface, outside of the biologically active zone, the removal proposed is non-time critical. A planning and design period of at least six months exists prior to on-Site removal activities. The non-time critical removal action will minimize the possibility that the most concentrated inventory of 2,3,7,8-TCDD will migrate due to extreme weather events. Although the sediment to be removed is not on the surface and poses no immediate risk, because the possibility exists for erosion and resuspension due to a severe storm or other river disturbances, it would be of value to address this earlier than would be done in any of the remedial actions currently under investigation in the LPRSA. However, it is considered an interim action because both a Focused Feasibility Study (FFS) for an early action on the sediments of the lower eight miles of the river and a Remedial Investigation/Feasibility Study (RI/FS) for the 17-mile tidal portion of the river are underway (see Background section) to address the remediation of the overall LPRSA.

II. BACKGROUND

In 1984, the Diamond Alkali Superfund Site was placed on the National Priorities List. The RI/FS conducted at the Diamond Alkali plant included the sampling and assessment of sediment contamination within the Passaic River. Pursuant to a 1990 Consent Decree, OCC implemented a 1987 Record of Decision for an interim remedy at the plant, which included a cap and wall around the property, and a pump and treat system to contain contaminated ground water. Sampling of sediments in the Passaic River revealed many hazardous substances including, but not limited to dioxins and furans (including 2,3,7,8-TCDD), dichlorodiphenyl-trichloroethane (DDT), polychlorinated biphenyls (PCBs), polyaromatic hydrocarbons (PAHs), mercury, cadmium, copper, lead, nickel, and zinc. Some of the chemicals found in the sediments during the course of the remedial investigation may have migrated from the Diamond Alkali plant into the Passaic River through direct discharges, and ground-water and surface-water runoff.

In 1994, OCC signed an Administrative Order on Consent (AOC) with EPA to investigate a six-mile stretch of the Passaic River centered on the Diamond Alkali plant. A significant portion of the RI was completed by OCC. It showed that evaluation of a larger area was necessary because sediments contaminated with hazardous substances and other potential sources of hazardous substances are present along at least the entire 17-mile tidal stretch of the Passaic River and were further dispersed by the tidal nature of the Lower Passaic River. As a result, in January 2001, EPA directed OCC to suspend work under the AOC.

EPA and a partnership of federal and State of NJ agencies undertook a joint CERCLA-Water Resources Development Act (WRDA) study of the 17-mile tidal stretch of the Passaic River (the LPRSA). That work is on-going. During the course of the 17-mile study, the sediments of the lower eight miles of the Passaic River were found to be a major source of on-going contamination to the tidal river and Newark Bay. Therefore, EPA, NJDEP and the other partner agencies are developing a FFS to evaluate taking an early action to address that major source of on-going contamination.

III. THREAT TO PUBLIC HEALTH, WELFARE AND THE ENVIRONMENT

As a result of the contamination of fish and crab by dioxins and PCBs in the Newark Bay complex, the State of NJ has imposed consumption advisories, closures and sales bans, to limit the exposure of the fish- and crab-eating public to toxic contaminants in the Lower Passaic River, Newark Bay, Hackensack River, Arthur Kill and Kill Van Kull.

Sampling results from the six-mile RI/FS, as well as other earlier sampling events, show concentrations of 2,3,7,8-TCDD that significantly exceed the levels that can produce toxic effects to biota. Recent studies have shown that 2,3,7,8-TCDD bio-accumulates in fish, to levels rendering the fish unfit for human consumption, from sediment with a much lower level of 2,3,7,8-TCDD than found in these Passaic River sediments.

While the distribution of dioxin is still being studied in the 17-mile study and FFS for a potential early action, based on data gathered by EPA and other entities, including OCC, the highest concentrations of 2,3,7,8-TCDD (at levels exceeding 5 parts per million) appear to be in the sediments immediately in front of the Diamond Alkali plant.

The conditions in the sediments directly in front of the Diamond Alkali plant meet a number of the specific factors identified in 40 CFR Part 300.415(b)(2), including, but not limited to:

1. There is an actual or potential release of a hazardous substance, specifically 2,3,7,8-TCDD, exposing nearby of human populations, animals or the food chain (40 CFR 300.415(b)(2)(i));
2. There is the threat of actual or potential impacts to sensitive ecosystems due to the presence of 2,3,7,8-TCDD (40 CFR 300.415(b)(2)(ii)); and
3. There are high levels of 2,3,7,8-TCDD which could migrate or be released due to weather conditions (40 CFR 300.415(b)(2)(iv) & (v)).

As noted above, without a response action to remove the highly contaminated sediments in front of the Diamond Alkali plant, an extreme weather event might erode the sediments, which would cause the extremely toxic concentrations of 2,3,7,8-TCDD to migrate throughout the Lower Passaic River and Newark Bay, impacting human health and the environment. Consequently, while the removal action may not be time-critical, it is important to take the removal action in advance of potential remedial actions that may result from the on-going remedial investigations.

IV. ENFORCEMENT ACTIONS

As noted above, OCC proposed this action earlier this year and has agreed to enter into an AOC to undertake the removal action in front of the Diamond Alkali plant. The AOC would provide for OCC to perform the EE/CAs for each phase of the removal action, with EPA oversight. OCC would agree to pay EPA all Future Response Costs not inconsistent with the National Contingency Plan.

With regard to the LPRSA (17-mile study area), in June 2007, a group of 73 potentially responsible parties named the Cooperating Parties Group or CPG entered into an AOC with EPA to complete a RI/FS for the LPRSA. OCC is a member of the CPG. It is not anticipated that the CPG would sign on to any potential AOC for the removal action.

V. PROJECT COSTS

It is estimated that the two phases of the removal action would cost approximately $100 million total. It is estimated that EPA oversight costs would be approximately $5 million.

VI. RECOMMENDATION

A CERCLA Non-Time Critical Removal Action is needed to minimize the possibility that the highest concentrations of 2,3,7,8-TCDD in the Lower Passaic River will migrate due to extreme weather events and cause high risks to human health and the environment. The proposed response action is considered non-time critical, because the highest concentrations of 2,3,7,8-TCDD are buried beneath several feet of sediments and sufficient time is available before the removal action must be initiated. Because of the availability of a planning and design period of at least six months prior to on-Site remedial action activities, an EE/CA is appropriate to analyze the various removal alternatives available for the Site. The EE/CAs (Phase I and II) will be prepared by OCC, under EPA oversight, in conformance with the guidelines in Guidance on Conducting Non-Time-Critical Removal Actions under CERCLA (EPA/540-R-93-057, August 1993).

I recommend that you approve the preparation of the EE/CAs for the excavation of Lower Passaic River sediments in front of 80-120 Lister Avenue, as shown in Figure 1, as per the current delegation of authority, by signing below.

Approved: Alan J. Steinberg Date: 6-12-08

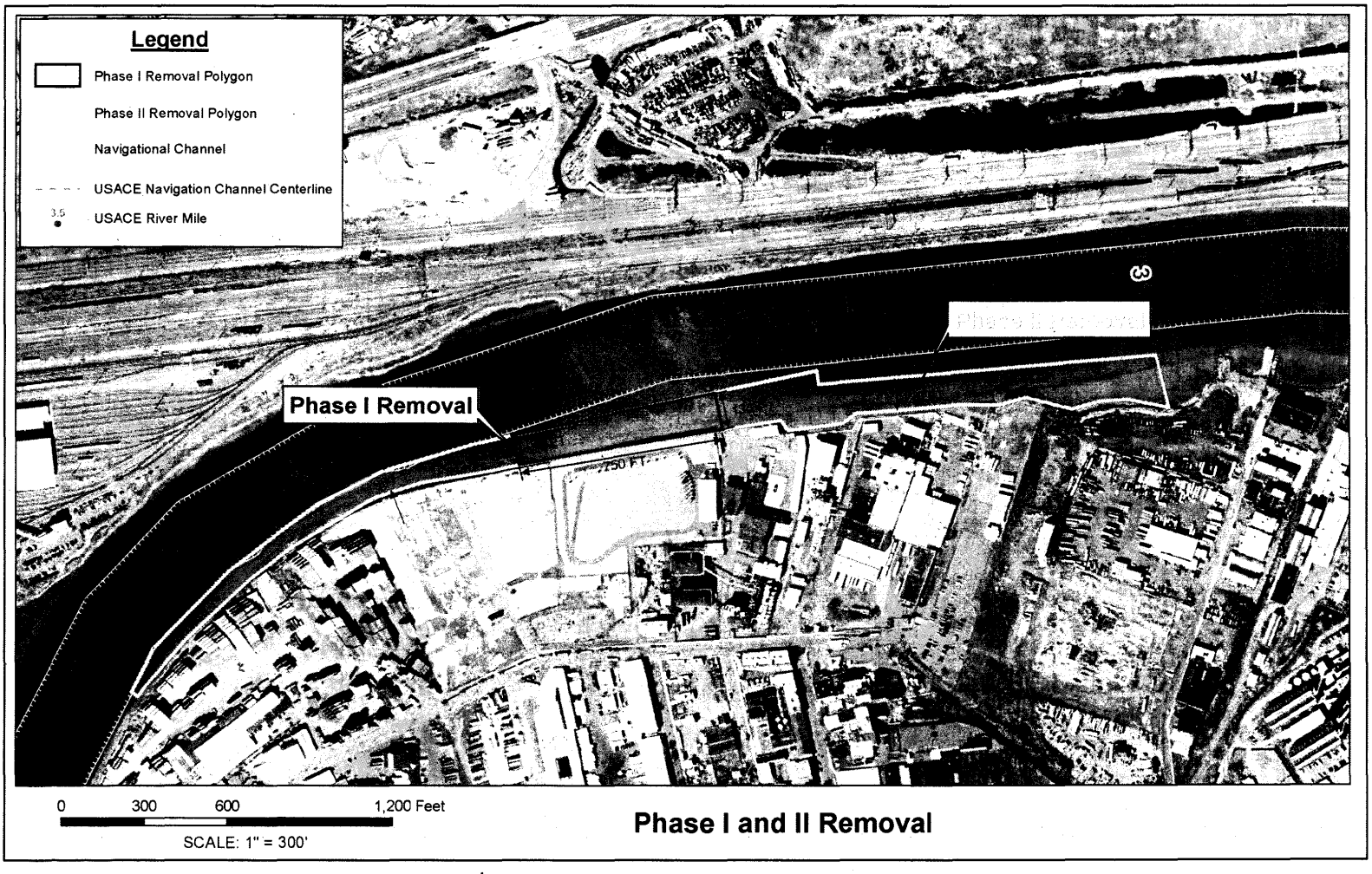
Alan J. Steinberg
Regional Administrator

Disapproved: _____ Date: _____

Alan J. Steinberg
Regional Administrator

cc: (After approval is obtained)

R. Basso, ERRD
E. Butler, ERRD
A. Yeh, ERRD
P. Hick, ORC
G. Zachos, Regional Public Liaison



Phase I and II Removal

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